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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,046	09/28/2001	Karl Mautz	SC0194WD	4300

7590

11/19/2002

Jim Clingan
Motorola, Inc.
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EXAMINER

BLUM, DAVID S

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 11/19/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,046

Applicant(s)

MAUTZ ET AL.

Examiner

David S Blum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 2 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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This action is in response to Amendment A paper #5, filed 10/01/02.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, 7, 9, and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Katsuyuki (JP 58-169149).

Katsuyuki teaches all of the positive steps of claims 1, 3-5, 7, 9, and 11-14 in that a magnetic means (film 3) having a pattern (2) is formed on a glass substrate which may be on a semiconductor wafer (abstract, constitution) used to provide information such as lot number. The pattern (2, figure 2) shows a series of regions and non-magnetic regions (as in claim 4). The magnetic film is provided at the wafer peripheral (abstract, purpose) as in claim 7. information is written in the film (abstract, constitution) as in claim 13. The film also masks the wafer (abstract, constitution) as in claim 14. The magnetic film is formed by deposition (paragraph 6) as in claim 12.

Regarding the limitations of claims 5 and 11 where the magnetic means comprise regions having different magnetizations (claim 5) and specifically mentioning sputtering (claim 11), figure 2 of Katsuyuki shows the magnetic film with regions of different heights and widths, therefore, showing regions having different magnetizations. Also,

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Katsuyuki teaches forming the film to by deposition, which would include sputtering (sputtering being a conventional deposition method).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuyuki (JP 58-169149) in view of Chang (US006197481B1) and Oishi (US006004405A).

Katsuyuki teaches all of the positive steps of claim 5 as recited above except for teaching a protective film over the magnetic film.

Chang teaches forming a protective film over alignment marks to protect the marks from subsequent processing steps (abstract). Although an alignment mark is not the same as an identification mark containing data, it is similar in that it is a mark used in identifying a part of the wafer for processing. It would have been obvious to modify Katsuyuki with the teachings of Chang so that a protective film would provide protection for identifying marks during processing so that the marks could be read.

Oishi teaches various types of marks are used to identify wafers, including notches (alignment marks) and laser marks (background and bar codes column 2 line 4). Thus,

although the marks carry different information, Oishi teaches them to have an art recognized equivalence.

It would be obvious to one skilled in the requisite art at the time of the invention to modify Katsuyuki by using a protective film as taught by Chang with reasonable expectation of producing an identification mark that is readable after subsequent processing steps.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuyuki (JP 58-169149) in view of Oishi (US006004405A).

Katsuyuki teaches all of the positive steps of claim 8 as recited above except for placing the identification mark (information for identification) on the inner region of a wafer where the vacuum chuck would engage the wafer. Oishi teaches forming an identification mark on the wafer side (figure 1A) where it will not interfere with the effective area of the wafer. Therefore it is obvious that the area where the vacuum chuck is employed may be used as the mark area as it is not an effective area (active area) of the wafer, but a peripheral area (constitution). Katsuyuki teaches forming the magnetic means in a peripheral area on the wafer. Thus Katsuyuki is teaching that the magnetic means be placed in an area on the wafer (surface or side) and Oishi teaches that this can be any area which is not an effective (active) area. The area where the chuck engages the wafer in the instant application is a peripheral area on the wafer and not an active area.

Regarding the limitation where the vacuum chuck has magnetic reading capabilities; that is a limitation on the reading apparatus, not the semiconductor device and is given

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no weight. The functional use of the magnetic means does not change whether or not the vacuum chuck can read the magnetic means or a separate piece on the apparatus is used (see MPEP 2114 regarding functional language).

It would have been obvious to one skilled in the requisite art at the time of the invention to modify Katsuyuki by including the vacuum chuck area as part of the peripheral area as taught by Oishi with reasonable expectation of producing an identification mark that is in a peripheral region and does not interfere with the effective production area.

Allowable Subject Matter

6. Claims 2 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2 and 10 limit the device and formation of the device to forming the magnetic means by ion implantation. In the case of claim 2, where the process step of implantation carries little weight, the limitation is viewed as having the magnetic means in the substrate rather than on the substrate. Katsuyuki forms the magnetic means by deposition on the substrate but does not teach or suggest implanting the magnetic means into the substrate.

Response to Arguments

7. Applicant's arguments filed 10/01/02 have been fully considered but they are not persuasive.

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The applicant argues that Katsuyuki (JP 58-169149) does not teach forming the magnetic means on a semiconductor substrate, but only on a translucent glass substrate, and therefore does not teach all of the positive steps of claims 1-15.


However, in the constitution, Katsuyuki teaches the film carries information about the kind, lot number, etching conditions, etc. Further, when used in lithographing a semiconductor wafer (substrate), the film carries information of the kind of mask itself, lot number, etc. (constitution), thus, the film is on the semiconductor wafer. Thus Katsuyuki teaches that the magnetic means may be on a glass substrate (as argued by the applicant) or on a semiconductor wafer.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Blum whose telephone number is (703)-306-9168 and e-mail address is David.blum@USPTO.gov .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr., can be reached at (703)-308-4940. Our facsimile number for Before-Final Communications is (703)- 872-9318 and for After-Final Communications is (703)- 872-9319. The facsimile number for customer service is (703)-872-9317. Our receptionist's number is (703)-308-0956.

David S. Blum

November 18, 2002


CARL WHITEHEAD, JR.
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